

least one glass forming substance, said waste material being heated for a time sufficient for substantially all of said at least one glass forming substance to melt and form a molten glass, said waste material also being heated for a time and to a temperature [said fusion temperature being] sufficient to vaporize substantially all of said at least one volatile metal which is separated from said molten glass in a flue gas stream [a portion of said metals]; [and]

filtering said flue gas stream in order to collect [separating] said vaporized metal [metals from said at least one glass forming substance]; and

cooling said molten glass, said molten glass comprising a glass that is substantially free of said at least one volatile metal.

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10.9 (Amended) A process as defined in claim 1, wherein at least one volatile metal said ~~vaporized metals comprise a material~~ selected from the group consisting of arsenic, barium, chromium, mercury, selenium, nickel, lead, zinc and cadmium.

1710 (Amended) A process for separating metals from waste comprising the steps of:

providing a hazardous waste composition containing volatile metals and at least one glass forming material, said volatile metals comprising materials selected from the groups consisting of lead, zinc, nickel, arsenic, barium, cadmium,

chromium, mercury, and selenium;

heating said waste composition in a reducing atmosphere to a temperature sufficient to cause substantially all [a portion] of said volatile metals to vaporize, said vaporized metals being contained in a flue gas being emitted by said waste composition;

further heating said waste composition in a direct contact radiant heating device to at least the fusion temperature of said at least one glass forming material, said radiant heating device being configured to heat said hazardous waste composition for a time sufficient for substantially all of said at least one glass forming material to melt and form a molten glass that is substantially free of volatile metals, said waste composition comprising said molten glass and a residual non-glassy material; [and]

92 separating said molten glass from said residual non-glassy material; and

filtering said vaporized metals from said flue gas.

93 12~~13~~¹⁰⁰. (Amended) A process as defined in claim ~~11~~¹⁰⁰ [1], wherein said waste composition is heated to a temperature of from about 2,200°F to about 2,900°F during said process.

94 14~~15~~¹⁰. (Amended) A process as defined in claim ~~14~~¹⁰ [15], wherein said flue gas is filtered by being fed to a baghouse.

95 16~~17~~¹⁸. (Amended) A process as defined in claim ~~16~~¹⁷, wherein

said electric arc furnace includes carbon electrodes that contact said waste composition during said heating step [steps], said carbon electrodes contributing to said reducing atmosphere for facilitating volatilization of said metals.

REMARKS

Favorable reconsideration and allowance of the present application, in view of the foregoing amendments and following remarks, are respectfully requested.

Applicant and his attorney wish to express their gratitude to both Examiner McGuthry-Banks and Examiner Andrews for the courtesy and assistance they extended during the recent personal interview. As stated on the Examiner Interview Summary Record, although no agreement was reached pending the submission of this Amendment, during the interview the differences between the Bureau of Mines publication cited in the Office Action and the process claimed in the present application were discussed. Specifically, it was explained that the process of the present invention removes substantially all of the volatile metals from the waste being processed in forming the glass product. The Bureau of Mines publication, on the other hand, teaches encapsulating the volatile metals into the vitrified product that is formed.

During the interview, the Examiners also suggested amending the claims to better define the product that is formed. In